Claims:

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1. Dispensing device for dispensing or discharging a liquid or viscous substance (2), preferably foodstuff,

wherein at least one pump means (4) is provided to perform pump motions for sucking said substance (2) into the dispensing device (1) and dispense or discharge it therefrom.

characterized in

that the pump means (4) is provided to divide inner parts of the dispensing device (1) into at least one suc10 tion chamber (30) and at least one dispensing or discharge chamber (31) which are interconnected through at least one transfer chamber (32),

that the pump means (4), during a first pump motion in one direction (A), is provided to suck substance (2) into the suction chamber (30) and simultaneously dispense or discharge substance (2) from the discharge chamber (31), and

that the pump means (4), during a second pump motion in the opposite direction (D) relative to the first pump motion, is provided to feed substance (2) from the suction chamber (30) and through the transfer chamber (32) into the discharge chamber (31).

2. Dispensing device according to claim 1, characterized in

that at least one first non-return valve (20) is provided to open a substance inlet opening (23) through which substance (2) can be sucked into the suction chamber (30), but close said inlet opening (23) when substance (2) pass through the transfer chamber (32) into the discharge chamber (31), and

that at least one second non-return valve (24) is provided to open at least one substance transfer opening (11) through which substance (2) can be sucked into the discharge chamber (31), but close said transfer opening (11) when substance (2) is discharged from the discharge chamber (31).

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- 3. Dispensing device according to claim 1 or 2, characterized in that the pump means (4) comprises an elastic dome shaped member (16) which is provided to be brought to perform a pump motion in one 5 direction (A) by being pressed or pushed inwards, and which, when the pressure ceases, performs a pump motion in an opposite direction (D) while said member (16) automatically returns to its original dome shape.
- 4. Dispensing device according to claim 3, cha-10 racterized in that the dome shaped member (16) has an elastic tongue which defines a valve body (21) for the first non-return valve (20) and at least one other elastic tongue which defines a valve body (25) for the second non-return valve (24).
- 5. Dispensing device according to claim 4, cha-15 in that the dome shaped member racterized (16) and the valve bodies (21, 25) of the first and second non-return valves (20, 24) are made in one piece of elastic material.
- 6. Dispensing device according to claim 4 or 5, 20 characterized i n

that the dome shaped member (16) is, at peripheral parts thereof, provided with a flange (17) which is radially directed relative to said dome shaped member,

that the valve body (21) of the first non-return 25 valve (20) is located at peripheral parts of said flange (17) and is directed axially therefrom relative to the dome shaped member (16) such that said valve body (21) can cooperate with a valve seat (22) at a substance in-30 let opening (23) for letting substance (2) into the suction chamber (30),

that the valve body (25) of the second non-return valve (24) is located at the same peripheral parts of the dome shaped member (16) as the flange (17), and

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that the valve body (25) of the second non-return valve (24) is axially directed relative to the dome shaped member (16) such that it will be situated within and can

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cooperate with at least one valve seat (26) at at least one substance transfer opening (11) and defined by an upwardly directed wall (10) of the dispensing device (1).

7. Dispensing device according to claim 6, c h a - 5 racterized in

that the flange (17) of the dome shaped member (16) extends in between a lower and an upper member (7, 8) of the discharge housing (3),

that parts of the flange (17) situated in the trans10 fer chamber (32) has at least one hole (17a) permitting
substance (2) to flow through said transfer chamber (32)
from the suction chamber (30) into the discharge chamber
(31), and

that the dome shaped member (16) can be pressed downwards from an upper position in an upper member (8) of
the dispensing device (1) to a lower position in a lower
member (7) of said dispensing device (1) for sucking substance (2) into the suction chamber (30) and discharge or
outfeed of substance (2) from the discharge chamber (31).

8. Dispensing device according to any preceding claim, characterized in

that the pump means (4) is provided in a dispensing or discharge housing (3) which defines the suction chamber (30), the transfer chamber (32) and the discharge chamber (31) and which comprises a lower and an upper member (7, 8),

that the lower and upper members (7, 8) can be interconnected and disconnected,

that parts of a flange (17) of the pump means (4)

30 are situated between the lower and upper members (7, 8)

when these members are interconnected, such that said

parts of the flange (17) define sealing means between

the lower and upper members (7, 8) when said members are

interconnected, and

35 that the pump means (4) can be released from the discharge housing (3) by disconnection of the lower and upper members (7, 8).

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9. Dispensing device according to claim 8, c h a - r a c t e r i z e d i n that the lower and upper members (7, 8) include portions which define a bayonet mount or coupling (44) permitting interconnection and disconnection of said portions, preferably by rotating one of said members (7, 8) relative to the other member (7, 8).

- 10. Dispensing device according to any preceding claim, characterized in that the dispensing device (1) is designed as a hand pump which can be held in one hand and operated therewith or with two hands for discharge or feedout of substance (2).
- 11. Dispensing device according to claim 10, c h a r a c t e r i z e d i n that the dispensing device (1) comprises a handle (34) with a first and a second handle
  15 member (35, 36) or similar such that said device (1) can be held in one hand and the pump means (4) operated by effecting the second handle member (36) with one or both hands for dispensing or discharging substance (2) from the dispensing device (1).
- 20 12. Dispensing device according to claim 11, characterized in

that the second handle member (36) is pivotally mounted and designed as a lever with a first and a second shank (39, 40), and

- 25 that the first shank (39) can be brought to perform pump motions with the hand, said pump motions being transferred to the pump means (4) through the second shank (40).
- 13. Dispensing device according to claim 12, c h a r a c t e r i z e d i n that the second shank (40) is
  30 designed such that it can be operated with the other hand for supporting the pump motions being brought to the first shank (39) by one hand.
- 14. Dispensing device according to any preceding claim, characterized in that the dispensing device (1) comprises a piston means (13) which is provided to bring the pump means (4) to perform pump motions, said piston means (13) being displaceably moun-

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ted in a sleeve (12) which is located on a dispensing or discharge housing (3) forming part of the dispensing device (1) and through which the piston means (13) extends into said housing (3).

- 15. Dispensing device according to any preceding claim, characterized in that at least one sealing means (45) is provided to bring about a sealing between the piston means (13) and the sleeve (12).
- 16. Dispensing device according to any preceding 10 claim, characterized in

that at least one dispensing or discharge pipe (9) or similar is provided for dispensing or discharging substance (2),

that a third non-return valve (27) is located on 15 the discharge pipe (9),

that the third non-return valve (27) is a hose member (28) which is threaded into or onto said discharge pipe (9) and which has a closed outer end (29),

that the outer end (29) of the hose member (28) can 20 be opened when substance (2) is pressing against said outer end, and

that the outer end (29) of the hose member (28) automatically returns to closed shape when the pressure of substance (2) against it ceases.

- 25 17. Dispensing device according to any preceding claim, c h a r a c t e r i z e d i n that the amount of substance (2) which is dispensed or discharged by means of the pump means (4) can be altered by replacing a piston means (13) which is provided to effect the pump means (4) for discharge of the substance (2), with another piston means (13) having another length and/or diameter.
- 18. Dispensing device according to any preceding claim, c h a r a c t e r i z e d i n that the dispensing device (1) comprises or consists of the following four members which for separate cleaning are disconnectable from each other and then reconnectable, namely

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- a lower and an upper member (7, 8), forming part of a dispensing or discharge housing (3) and disconnectable from each other,
- a pump means (4) with valve bodies (21, 25) for first and second non-return valves (20, 24), said pump means (4) being located between said lower and upper members (7, 8) and disconnectable therefrom, and
  - a piston means (13) for effecting the pump means (4), said piston means (13) being releasably mounted on said upper member (8)...
  - 19. Dispensing device according to any preceding claim, characterized in
- that it comprises a dispensing or discharge housing
  (3) having a lower and an upper member (7, 8) which are
  interconnectable,
  - that the lower member (7) is rotatable relative to the upper member (8) about an imaginary geometric centre line (CL),
- that the lower member (7) has a dispensing or dis-20 charge pipe (9) or similar, through which substance (2) can be dispensed or discharged from the discharge housing (3),
  - that the discharge pipe (9) is eccentrically located relative to the centre line (CL), and
- 25 that the discharge pipe (9) can be set in different rotary positions relative to the centre line (CL) by rotating the lower member (7) relative to the upper member (8).
- 20. Dispensing device according to any preceding claim, c h a r a c t e r i z e d i n that the dispensing device (1) is connected to a container (5) with substance (2) through a hose (6) or similar and that the pump means (4) is provided to suck substance (2) from the container (5) through the hose (6) into the suction chamber (30).
- 21. Dispensing device according to claim 20, c h a r a c t e r i z e d i n that the container (5) is a flexible container, e.g. a plastic bag, which is desig-

ned to collapse when substance (2) is sucked out of said container (5).

22. Dispensing device according to any preceding claim, characterized in that said substance (2) is mustard, ketchup, mayonnaise, dressing or cooking oil which shall be dispensed or discharged onto one or more locations, e.g. one or more dishes.